

DOCUMENT TRANSMITTAL

Ref. No.	: FSL JUBAIL : SA08-3012	Date	: 14 Feb. 2015
To	: A.H. Al Marhoon & Bros.Co Rahima, Saudi Arabia Fax: (03) 667-4721		
Attention	: Plant Manager		
Re	: Monthly Aggregate Testing – February 2015		

Please find enclosed the following documents:

Quantity	Document Reference	
1 each	3/4" Coarse Aggregate	Lab.No. 9899
-do-	3/8" Coarse Aggregate	Lab.No. 9900
-do-	Dune Sand	Lab.No. 9901
-do-	Summary Combined Aggregate	Lab No. 9899 – 9900
-do-	Chemical Analysis, Water	Lab No. 9902
	Invoice #	
Remarks:	ARAMCO & SCECO Specs.	

We request you to return a signed copy of this document transmittal form by facsimile transmission on
03 341-2701

Regards,

Receipt confirmation of document(s)

FUGRO-SUHAIMI LTD.



Muhammad Nawaz
Lab. Supervisor
050-6800943



Signature :

Name (print) :

Date :

Company Stamp:

SUMMARY OF TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	9899
Material	3/4" (20 mm) Coarse Aggregate	Date Sampled	01 Feb. 2015
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Reported	14 Feb. 2015

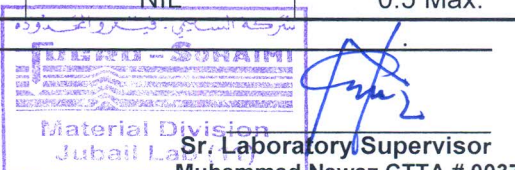
Properties:

Properties Tested	Test Method	Results	SCECO Specs.
Sieve analysis	ASTM C-136	See Attached	--
Material finer than No. 200 sieve %	ASTM C-117	0.68	5.0 Max.
Clay lumps & friable particles %	ASTM C-142	0.45	1.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		7.3	--
Loss at 500 revolutions %		32.6	35 Max.
Ratio 100/500 rev.		0.22	0.25 max
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	9.9	18 Max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.606	--
SSD basis		2.565	--
Dry basis		2.537	--
Absorption		1.0	2.5 max
Acid soluble chloride, (Cl), %	ASTM C 114		
(NaCl), %		0.015	0.03 max
Acid soluble sulphate (SO ₃), %	BS-812 Part 118		
(SO ₄), %		0.018	
Flakiness index	BS-812	10.7	30 Max.
Elongation index	BS-812	14.4	45 Max.
Coal & lignite	ASTM C-123	NIL	0.5 Max.

Remarks:

Tested By: Genabe
CTTA # : 0448

Reviewed By: Imran Ahmed
CTTA # : 0556



Material Division
Jubail Lab
Sr. Laboratory Supervisor
Muhammad Nawaz CTTA # 0037

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Certificate # 3512.05

Construction Materials Testing Laboratory
Jubail Branch

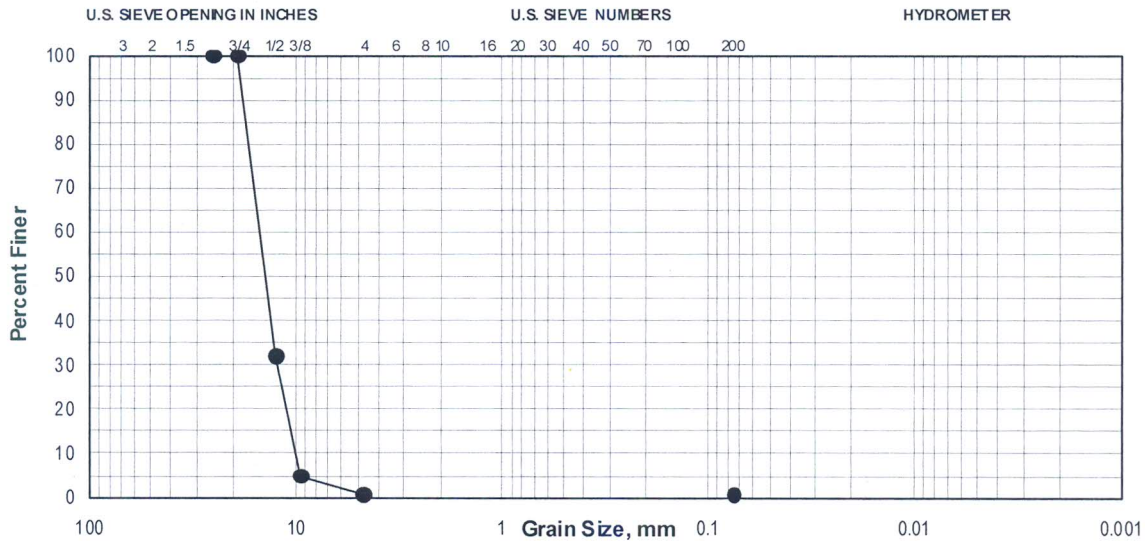
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Saudi Arabia - E-mail.: fsljubail@fugro-suhaimi.com



السحيمي - فيفرو

PARTICLE SIZE ANALYSIS TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	9899
Material	3/4" (20 mm) Coarse Aggregate	Date Sampled	01 Feb. 2015
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Tested	04-05 Feb. 2015
Method	ASTM C-117/136	Date Reported	14 Feb. 2015



Gravel		Sand			Silt or Clay
Coarse	fine	Coarse	medium	fine	

Description of Sand / Gravel Particles:

Shape	Hardness	Specific Gravity

Sieve Size Inch(mm)	Passing %	Specification	Properties Tested		
			Item	Description	Result
1 (25.0 mm)	100				
3/4 (19 mm)	100				
1/2 (12.5 mm)	32				
3/8 (9.5 mm)	5				
#4 (4.75 mm)	0.9				
#8 (2.36 mm)	-				
#16 (1.18 mm)	-				
#100 (0.15 mm)	-				
#200 (75 mm)	0.68				

Remarks	
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Tested By: Genabe Reviewed By: Imran Ahmed
CTTA # : 0448 CTTA # : 0556



Sr. Laboratory Supervisor
Muhammad Nawaz CTTA # 0037

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السحيمي - فيغرو

SUMMARY OF TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	9900
Material	3/8" (10- mm) Coarse Aggregate	Date Sampled	01 Feb. 2015
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Reported	14 Feb. 2015

Properties:

Properties Tested	Test Method	Results	SCECO Specs.
Sieve analysis	ASTM C-136	See Attached	--
Material finer than No. 200 sieve %	ASTM C-117	0.80	5.0 Max.
Clay lumps & friable particles %	ASTM C-142	0.55	1.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		7.5	--
Loss at 500 revolutions %		32.8	35 Max.
Ratio 100/500 rev.		0.24	0.25 max
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	14.0	18 Max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.623	--
SSD basis		2.570	--
Dry basis		2.537	--
Absorption		1.3	2.5 max
Acid soluble chloride, (Cl), %	ASTM C 114	0.011	0.03 max
(NaCl), %		0.013	
Acid soluble sulphate (SO ₃), %	BS-812 Part 118	0.0173	
(SO ₄), %		0.0173	0.5 max
Flakiness index	BS-812	10.3	30 Max.
Elongation index	BS-812	16.8	45 Max.
Coal & lignite	ASTM C-123	Nil	0.5 Max.

Remarks: _____

 Tested By: Genabe
 CTTA # : 0448

 Reviewed By: Imran Ahmed
 CTTA # : 0556

 Sr. Laboratory Supervisor
 Muhammad Nawaz CTTA # 0037

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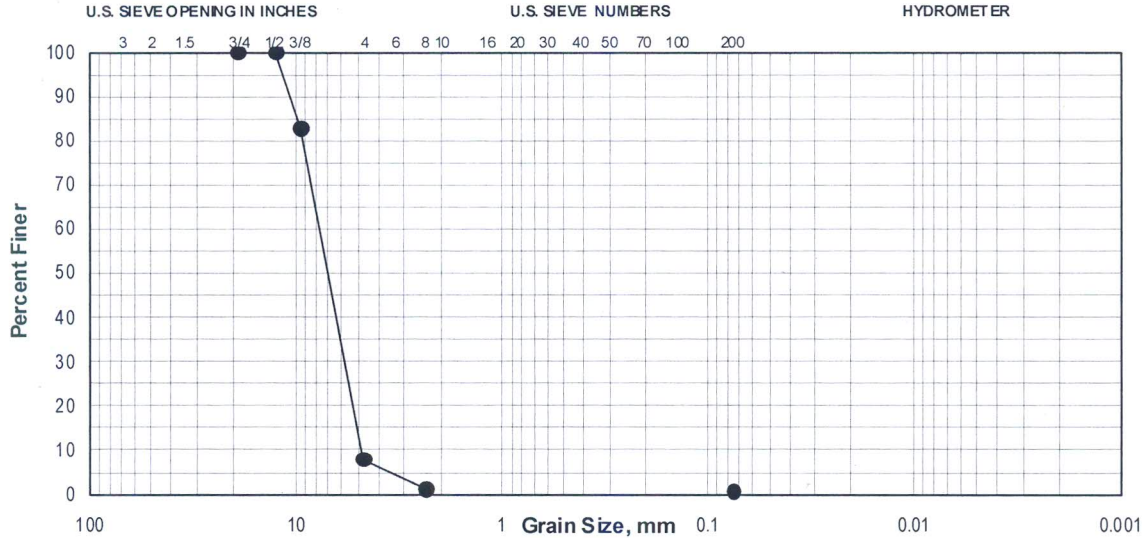
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Saudi Arabia - E-mail.: fsljubail@fugro-suhaimi.com



السحيمي - فيفرو

PARTICLE SIZE ANALYSIS TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	9900
Material	3/8" (10 mm) Coarse Aggregate	Date Sampled	01 Feb. 2015
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Tested	04-05 Feb. 2015
Method	ASTM C-117/136	Date Reported	14 Feb. 2015



Gravel		Sand			Silt or Clay
Coarse	fine	Coarse	medium	fine	

Description of Sand / Gravel Particles:

Shape	Hardness	Specific Gravity

Sieve Size Inch(mm)	Passing %	Specification	Properties Tested		
			Item	Description	Result
3/4 (19.0 mm)	100				
1/2 (12.5 mm)	100				
3/8 (9.5 mm)	83				
#4 (4.75 mm)	8				
#8 (2.36 mm)	1.2				
#16 (1.18 mm)	-				
#30 (0.600 mm)	-				
#50 (0.300 mm)	-				
#100 (0.15 mm)	-				
#200 (75 mm)	0.80				

Remarks	
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Tested By: Genabe Reviewed By: Imran Ahmed
CTTA # : 0448 CTTA # : 0556

شركة السحيمي - فيفرو المحدودة
FUGRO-SUHAIMI
Material Division
Jubail Lab (11)
Sr. Laboratory Supervisor
Muhammad Nawaz CTTA # 0037

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SUMMARY OF TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	9901
Material	Dune Sand	Date Sampled	01 Feb. 2015
Source	Baladiyah, Jubail (Sampled by FSL)	Date Reported	14 Feb. 2015

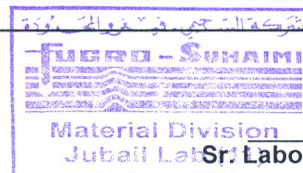
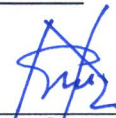
Properties:

Properties Tested	Test Method	Results	SCECO Specs.
Sieve analysis	ASTM C-136	See Attached	--
Material finer than No. 200 sieve %	ASTM C-117	1.7	2.0 Max.
Clay lumps & friable particles %	ASTM C-142	N/A	2.0 Max.
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	4.9	15 Max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.659	--
SSD basis		2.624	--
Dry basis		2.603	--
Absorption		0.8	1.0 max
Acid soluble chloride, (Cl), %	ASTM C 114		
(NaCl), %		0.004	0.05 max
Acid soluble sulphate (SO ₃), %	BS-812 Part 118		
(SO ₄), %		0.114	0.4 Max
Organic impurities	ASTM C-40	Light then std.	

Remarks: Not applicable: Material is finer than test size i.e. retained on Sieve No.16 hence the test is not applicable

Tested By: Genabe
CTTA # : 0448

Reviewed By: Imran Ahmed
CTTA # : 0556

Sr. Laboratory Supervisor
Muhammad Nawaz CTTA # 0037

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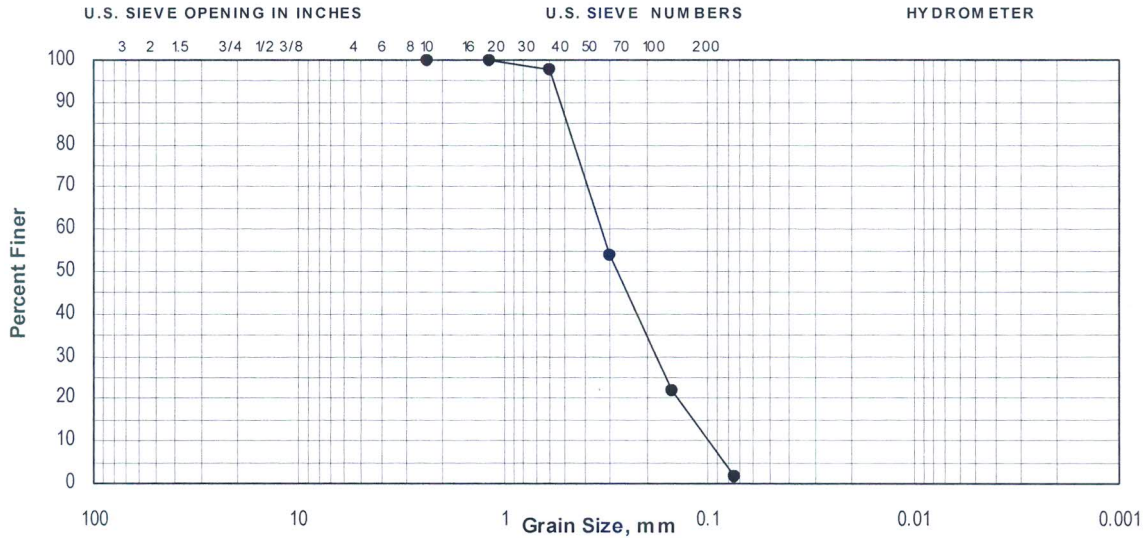
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السحيمي - فيغرو

PARTICLE SIZE ANALYSIS TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	9901
Material	Dune Sand	Date Sampled	01 Feb. 2015
Source	Baladiyah, Jubail (Sampled by FSL)	Date Tested	04-05 Feb. 2015
Method	ASTM C-117/136	Date Reported	14 Feb. 2015



Gravel		Sand			Silt or Clay
Coarse	fine	Coarse	medium	fine	

Description of Sand / Gravel Particles:

Shape	Hardness	Specific Gravity

Sieve Size Inch(mm)	Passing %	Specification	Properties Tested		
			Item	Description	Result
#8 (2.36 mm)	100				
#16 (1.18 mm)	100				
#30 (0.600 mm)	98				
#50 (0.300 mm)	54				
#100 (0.15 mm)	22				
#200 (75 mm)	1.7				

Remarks	
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Tested By: Genabe
CTTA # : 0448

Reviewed By: Imran Ahmed
CTTA # : 0556

شركة السحيمي - فيغرو المحدودة
FUGRO - SUHAIMI
Material Division
Jubail
Sr. Laboratory Supervisor
Muhammad Nawaz CTTA # 0037

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TEST REPORT FOR CHEMICAL ANALYSIS ON WATER

Client	A.H. Al Marhoon & Bros. Co.	Report Date	14 Feb. 2015
Project	Concrete Batch Plant, Rahima	Job No.	SA08-3012
Source	Sampled by FSL	Lab No.	9902
Sample Location	From Batch Plant	Sampled by	Sampled by FSL

Fugro-Suhaimi Ltd. (FSL) has performed chemical analysis on a water sample based on client request. The testing was carried out in accordance with the relevant ASTM and APHA Methods. The results and pertinent information are as follows:

Test results

Serial No.	Determination	Test Results	SCECO Specs.
2.	pH	7.34	7 – 8.5
3.	Chloride as Cl ⁻ , ppm	30.6	300 max
4.	Sulfate as SO ₃ , ppm	17.0	300 max
5.	Total Dissolved Solids- TDS, ppm	89.8	500 max

Remarks: _____ Test results indicate compliance with the SCECO Standard 71-SMSS-5, Rev.4.

Tested By: CPN Reviewed By: WN
CTTA # : - CTTA # : -




Sr. Laboratory Supervisor
Muhammad Nawaz CTTA # 0037

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